**[4910-13-P]**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2021-1020; Project Identifier AD-2021-00864-T; Amendment 39-22055; AD 2022-11-05]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain The Boeing Company Model 777 airplanes. This AD was prompted by a report of the loss of the nuts at all four fastener locations common to the outboard flap inboard support rear spar attachment fittings, which affects the retention feature of the fasteners and leaves the fasteners susceptible to migrating out of the joint. This AD requires repetitive detailed inspections for discrepancies of the fasteners and shim of the wing rear spar at certain outboard flap supports; a detailed inspection for damage of the shim, flap support mechanism, and wing lower skin; installation of new fasteners and shims; and repair or replacement of damaged parts. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet https://www.myboeingfleet.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at https://www.regulations.gov by searching for and locating Docket No. FAA-2021-1020.

**Examining the AD Docket**

You may examine the AD docket at https://www.regulations.gov by searching for and locating Docket No. FAA-2021-1020; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Luis Cortez, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: (206) 231-3958; email: Luis.A.Cortez-Muniz@faa.gov.

**SUPPLEMENTARY INFORMATION:**

**Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain The Boeing Company Model 777 airplanes. The NPRM published in the *Federal Register* on December 28, 2021 (86 FR 73706). The NPRM was prompted by a report of the loss of the nuts at all four fastener locations common to the outboard flap inboard support rear spar attachment fittings,

which affects the retention feature of the fasteners and leaves the fasteners susceptible to migrating out of the joint. In the NPRM, the FAA proposed to require repetitive detailed inspections for discrepancies of the fasteners and shim of the wing rear spar at certain outboard flap supports; a detailed inspection for damage of the shim, flap support mechanism, and wing lower skin; installation of new fasteners and shims; and repair or replacement of damaged parts. The FAA is issuing this AD to address the resulting inability of the outboard flap support to sustain limit load, and potential loss of the outboard flap. Loss of the fastener retention feature in the rear spar attachment may lead to a severed joint at the forward attachment point, leading to separation of the support fitting, which could cause damage and consequent reduced controllability and reduced structural integrity of the airplane.

**Discussion of Final Airworthiness Directive**

**Comments**

The FAA received comments from the Air Line Pilots Association, International (ALPA), Boeing, and an individual, who supported the NPRM without change.

The FAA received additional comments from three commenters, including Air France, United Airlines (UAL), and FedEx. The following presents the comments received on the NPRM and the FAA's response to each comment.

**Request to Extend Compliance Time**

Air France asked that the FAA change the threshold and interval for the inspections to match a heavy maintenance visit, or keep the current repeat intervals but change the scheduling rule to use "whichever occurs later" for the specified compliance time. Air France stated that Boeing has identified the root cause to be a significant cyclical compression load that leads to the loss of fastener clamp up, so the issue seems to be related more to flight cycles than flight length. Air France added that with the 777 fleet used mostly for long-haul operations, its airplanes will quickly reach the flight-hour

threshold. Air France noted that in the referenced service information, replacing damaged parts specifies installation of new fasteners and shims common to all four outboard flap support locations at the same time, which will impact maintenance and could delay the aircraft's return to service.

The FAA does not agree with the commenter's request to extend the compliance time threshold and interval for the inspections. The FAA determined that the compliance time, as proposed, represents the maximum interval of time allowable for the affected airplanes to continue to safely operate before the initial and repetitive inspections and on-condition actions are done. If the inspection interval were based on maintenance schedules, which vary among operators, there would be no assurance that the airplane would be inspected and repaired during that maximum interval. In addition, in developing an appropriate compliance time, the FAA coordinated with the manufacturer to provide a compliance time with an acceptable level of safety. However, under the provisions of paragraph (i) of this AD, the FAA will consider requests for approval of an extension of the compliance time, if sufficient data are submitted to substantiate that the change would provide an acceptable level of safety. The FAA has not changed this AD in this regard.

**Request to Allow Alternate Terminating Actions**

Air France asked that the FAA provide separate terminating action for the left-hand wing (outboard flap support number 1 and 2) and the right-hand wing (outboard flap support number 7 and 8). Air France asserted that depending on the inspection results, terminating action can be accomplished or scheduled during two different maintenance opportunities: (1) when a defect is found on outboard flap support number 1, the modification should be completed as corrective action at position numbers 1 and 2 only; and (2) when no defect is found on outboard flap support numbers 7 and 8, the terminating action can be postponed and performed before the mandated threshold. Air France added that if a defect is found, the referenced service information specifies to

modify all four outboard flap support locations at the same time, which will have an impact on maintenance and could delay the aircraft's return to service.

FedEx asked that the proposed AD mandate the terminating action only for flap support locations with findings. FedEx stated that Boeing Alert Requirements Bulletin 777-57A0123 RB, dated July 8, 2021, specifies accomplishment of the terminating action at all four flap support locations even if there are inspection findings at only one location.

The FAA does not agree with the commenters' requests to allow alternative terminating actions. The FAA coordinated with the manufacturer regarding the corrective action, and determined that the terminating action for the inspection findings as specified in the proposed AD provides the necessary level of safety. Under the provisions of paragraph (i) of this AD, however, the FAA will consider requests for approval of alternative terminating action, if sufficient data are submitted to substantiate that the change would provide an acceptable level of safety. The FAA has not changed this AD in this regard.

**Request to Include Changes in Information Notice**

FedEx and UAL asked that the proposed AD allow for loosening of the two bolts on the adjacent flap support mechanism beam, as specified in the proposed changes in Boeing Service Bulletin Information Notice 777-57A0123 IN 01, dated September 14, 2021, to ensure better accomplishment of the required inspection and provide further access to clean and inspect the flap support. FedEx stated that based on experience with modifying 777F airplanes, the changes will ensure that the safety objectives of the service information are met. FedEx noted that approved data published in the B777 Structural Repair Manual contains this proposed language.

The FAA does not agree with the commenters' requests. The changes proposed in the referenced information notice have not been approved by the FAA. However, under the provisions of paragraph (i) of this AD, the FAA will consider requests for approval of

the revised service information with the information notice incorporated, if sufficient data are submitted to substantiate that the change would provide an acceptable level of safety. The FAA has not changed this AD in this regard.

**Conclusion**

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

**Related Service Information under 1 CFR Part 51**

The FAA reviewed Boeing Alert Requirements Bulletin 777-57A0123 RB, dated July 8, 2021. This service information specifies procedures for repetitive detailed inspections for discrepancies (missing nuts, loose nuts, thread protrusion, shim migration, and gapping between the shim and wing lower skin or between the shim and flap support fitting) of the fasteners and shim of the wing rear spar at outboard flap support numbers 1, 2, 7, and 8; a detailed inspection for damage of the shim, flap support mechanism, and wing lower skin; installation of new fasteners and shims; and repair or replacement of damaged parts. Installation of the new fasteners and shim would eliminate the need for the repetitive inspections. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

**Costs of Compliance**

The FAA estimates that this AD affects 280 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

**Estimated costs**

| Action | Labor cost | Parts cost | Cost per product | Cost on U.S. operators |
|---|---|---|---|---|
| Detailed inspections | 39 work-hours X $85 per hour = $3,315 | $0 | $3,315 | $928,200 per inspection cycle |
| Inspection for damage, installation of fasteners/shim, replacement of damaged parts | Up to 37 work-hours X $85 per hour = Up to $3,145 | $1,920 | Up to $5,065 | Up to $1,418,200 |

The FAA has received no definitive data on which to base the cost estimates for the on-condition repairs specified in this AD.

**Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

**Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the

national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

**PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2022-11-05 The Boeing Company**: Amendment 39-22055; Docket No. FAA-2021-1020; Project Identifier AD-2021-00864-T.

**(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to The Boeing Company Model 777-200, -200LR, -300, -300ER, and 777F series airplanes, certificated in any category, as identified in Boeing Alert Requirements Bulletin 777-57A0123 RB, dated July 8, 2021.

**(d) Subject**

Air Transport Association (ATA) of America Code 57, Wings.

**(e) Unsafe Condition**

This AD was prompted by a report of the loss of the nuts at all four fastener locations common to the outboard flap inboard support rear spar attachment fittings, which affects the retention feature of the fasteners and leaves the fasteners susceptible to migrating out of the joint. The FAA is issuing this AD to address the resulting inability of the outboard flap support to sustain limit load, and potential loss of the outboard flap. Loss of the fastener retention feature in the rear spar attachment may lead to a severed joint at the forward attachment point, leading to separation of the support fitting, which could cause damage and consequent reduced controllability and reduced structural integrity of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

Except as specified by paragraph (h) of this AD: At the applicable times specified in the "Compliance" paragraph of Boeing Alert Requirements Bulletin 777-57A0123 RB, dated July 8, 2021, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin 777-57A0123 RB, dated July 8, 2021.

Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin 777-57A0123, dated July 8, 2021,

which is referred to in Boeing Alert Requirements Bulletin 777-57A0123 RB, dated July 8, 2021.

**(h) Exceptions to Service Information Specifications**

(1) Where the Compliance Time columns of the tables in the "Compliance" paragraph of Boeing Alert Requirements Bulletin 777-57A0123 RB, dated July 8, 2021, use the phrase "the original issue date of Requirements Bulletin 777-57A0123 RB," this AD requires using the effective date of this AD.

(2) Where Boeing Alert Requirements Bulletin 777-57A0123 RB, dated July 8, 2021, specifies contacting Boeing for repair instructions: This AD requires doing the repair using a method approved in accordance with the procedures specified in paragraph (i) of this AD.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair

method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

**(j) Related Information**

For more information about this AD, contact Luis Cortez, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: (206) 231-3958; email: Luis.A.Cortez-Muniz@faa.gov.

**(k) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Requirements Bulletin 777-57A0123 RB, dated July 8, 2021.

(ii) [Reserved]

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet https://www.myboeingfleet.com.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, fr.inspection@nara.gov, or go to: https://www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on May 16, 2022.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,
Compliance & Airworthiness Division,
Aircraft Certification Service.
[FR Doc. 2022-12818 Filed: 6/14/2022 8:45 am; Publication Date: 6/15/2022]